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ABSTRACT

The Middle Childhood HOME (MC-HOME) Inventory is designed to measure the quality and quantity of stimulation and support available to a child in the home environment. It is an interview/questionnaire that is individually administered to the primary caregiver while the target child is awake and present. The instrument is intended to be a sensitive environmental index that can reflect meaningful variation within lower socioeconomic status groups. The MC-HOME inventory consists of 59 items and 7 subscales. The inventory is easy to administer and score, despite some limitations in its manual. Norms are based on a sample of 124 black and white children and their families from Little Rock (Arkansas). Despite limitations, the instrument appears to be a valuable way to measure the environment. Its heightened sensitivity in the lower ranges of ability makes it suitable for at-risk environments. The instrument lacks the true psychometric qualities that classical test construction methods would normally provide, but remains a useful tool for evaluation of the environment. (Contains 7 references.) (SLD)

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A Review of the Middle Childhood Home Inventory

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Title: Middle Childhood Home Observation for Measurement of the Environment (MC-HOME)
Authors: Bettye M. Caldwell and Robert H. Bradley
Publisher: Center for Research on Teaching and Learning, University of Arkansas at Little Rock
Date of publication: 1984
Date of most recent norming sample: 1988
Time required to administer: 45 to 90 minutes
Selected costs: Manual - $9.00. Protocol are not formally printed and can be purchased for $.10 each (copy costs). The publisher requests that individuals not copy the protocol.

Brief Description of Purpose and Nature of Test

The Middle Childhood HOME Inventory (MC-HOME) "is designed to measure the quality and quantity of stimulation and support available to a child in the home environment" (Bradley, 1993, p. 440). "In particular, the HOME is intended to be a screening tool to be utilized in identifying 'high risk' children" (Procidano, 1985, p.337). The "HOME was developed to be a more meaningful, sensitive environmental index than social class and thus be capable of reflecting meaningful variation within lower SES groups" (Procidano, p. 343).

"Items were based on both theoretical propositions and empirical research concerning aspects of the environment that facilitate the cognitive, social and emotional development of young children (Bradley, Caldwell, Rock, Hamrick, Harris, 1988, p.67).

The MC-HOME is an interview/questionnaire that is individually administered to the primary caregiver. The target child must also be present and awake for the testing procedure. The inventory was designed for children between 6-10 years old. It can be used with all children (e.g., disabled, diverse backgrounds, etc.).

The original HOME was developed in 1966 and, since its development, has "been widely used in studies of children's health and development" (Bradley, 1993, p.439). Presently, there are three versions of the inventory: Infant-Toddler (IT-HOME), Early Childhood (EC-HOME), and Middle Childhood (MC-HOME). A fourth version, Early Adolescent HOME, is in the final stages of development (Bradley, Caldwell, Brisby, Magee, Whiteside, & Rock, 1992).

The MC-HOME consists of 59 items and 7 subscales: Responsivity, Encouragement of Maturity, Acceptance, Learning Materials, Enrichment, Family Companionship, and Physical Environment. All items are scored either "yes" or "no" by the interviewer. Answers are obtained during the interview through conversation with the parent. The interviewer asks questions as needed to obtain the information necessary to score items. "The general tone of the interview should be that of two friendly people, who like to talk about children, sitting down together and doing exactly that" (Caldwell & Bradley, 1984, p.2).

Many items have an acceptable level of difficulty while others do not, thus, the passing rate (percent of people whose response indicates a good environment) is fairly high for a portion of the inventory. According to Bradley et al. (1988):

> For about two-thirds of the items, a moderate percentage of families was given credit for "passing" the item (30- 80%). Such a range of difficulty level is generally considered good from a psychometric point of view. However, over 80% of the families received credit for the remaining one-third of the items. An examination of these items reveals that many involve events that, if they occurred,

> would be indicative of a rather serious deficiency (e.g., "Parent has not cried or been visibly upset in the child's presence more than once in the past week"). (p.62)

Thus, families with either deficient or superior environments receive credit for many of the same items. "However, the intent in selecting items was to develop a measure sensitive to the potentially inadequate environment—a measure that is reasonably efficient in terms of the time needed for administration and scoring" (p. 65). Bradley et al. provide a helpful analogy:

> Many medical screening measures are designed to be sensitive to the range of scores indicative of disease or ill health. There is little concern in discriminating between those who are "healthy" and those who are "super healthy," only in discriminating the "healthy" from the potentially "unhealthy." Thus, most people screened "pass" the test. In this sense, the HOME is a limited instrument. (p. 65)

Practical Evaluation

The Administration manual for the HOME was written in 1984. The manual is not formally printed or bound. It is essentially typed and photocopied and can be difficult to read because of the quality of the copies. The protocol are produced in the same manner. Since its initial publication in 1984, the name of the inventory as well as the names of some subscales have changed, however, there has been no revision of the manual to date. Because of these minor revisions, there are inconsistencies between the original inventory in the manual and the more current protocol. In the manual, there are eight subscales; however, the new questionnaire has the seven scales as listed above. It appears that one

of these subscales, Paternal Involvement, was combined with the Family Companionship scale. However, this is unclear, because the summary box on the cover of the revised (not dated) protocol includes both Family Companionship and Paternal Involvement and omits the Physical Environment scale. Because of the informal nature of producing the protocols, they are subject to minor revisions. Furthermore, there is no indication of the currency of the protocol because no revision dates are given.

The MC-HOME is very easy to administer and score. Only minimal training is required. The authors suggest that it takes about 10 visits to become proficient (Bradley et al., 1988). There are no special qualifications other than having good interview and personal skills. As mentioned above, the interview is viewed more as a conversation. There is no specific order in which to ask questions. Items are scored as the answers arise during conversation. The manual does offer suggestions for formulating questions to elicit responses to items. Also, helpful specifications are provided on each item in order to clarify it's meaning and special exceptions are listed for each item. In addition, procedural suggestions are offered for arranging the visit and administering the HOME. The authors state that administration is flexible, and users can adjust the methods to fit their needs.

To score the inventory, the interviewer adds up all of the positive "yes" responses. A summary box is provided on the first page of the protocol. The MC-HOME yields subscale and full test scores; however, they are raw scores, and lack sufficient information to evaluate their quality. Bradley et al., (1988) justify their reason for this:

> To date, no attempt has been made to establish an exact "cutoff" score that is indicative of a high risk environment. For the Infant and Preschool HOME

> Inventories [now called Infant-Toddler and Early Childhood], scores one or more standard deviations below the mean have often been associated with poor developmental outcomes. However, the precise "cutoff" found most useful in particular instances tends to vary somewhat by culture. (pp. 65-66)

On the other versions of the HOME, there are convenient percentile ranges located in the summary box (i.e., Lowest Middle, Middle Half, or Upper Fourth). Scoring is done by comparing the raw score of the subscale (number of yesses) to the ranges under each percentile heading to evaluate the score. Each subscale has a different raw score because the number of questions varies across the test. For example, a raw score of 7 would be in the Middle Half on the Responsivity scale of the IT-HOME. Because the MC-HOME lacks such a table, judgment decisions must be made by using the means and standard deviation of the norm group plus personal experience. In other words, no standardized judgment can be made from the raw scores obtained on the inventory.

Technical Evaluation

The sample on which norms are based consisted of 124 children and their families from Little Rock, Arkansas. The sample was recruited through letters distributed in the public schools. Participants varied across age, race, and SES. Bradley et al. (1988) reported that Blacks were over represented for the population of Little Rock. Subjects were only Black and White. No other families from diverse backgrounds were included. In addition, there was a small number of subjects in the low SES group.

The MC-HOME has a correlation of .58 to measures of SES (Caldwell & Bradley, 1984). That is, low SES families tend to score lower on the HOME. In addition, as

mentioned above, the HOME is more sensitive in measuring lower ranges of stimulation in the home environment. Considering the high relation between SES and HOME scores, the number of participants from different groups should have been more balanced. Given the heightened sensitivity at the lower end of the spectrum, it would have been advantageous to have more subjects in the lower socioeconomic group.

Normative scores are reported as means and standard deviations for each subscale as well as the entire inventory (Bradley et al., 1988). In this article, MC-HOME scores were compared to measures of family demographic variables (e.g., SES, mother's occupation, life events, etc.) and children's academic achievement and classroom behavior.

Interviewers were four trained research assistant. Internal consistency and inter-observer agreement reliability coefficients were reported. Alpha coefficients ranging from .52 to .80 for the subscales and .90 for the total inventory were observed, while inter-observer agreement for 40 cases was 93% (Bradley et al., 1988).

Validity for the HOME was established through correlations with measures of demographic indices, life events, child achievement, and behavior. Bradley et al. (1988) reported statistically significant correlations between the HOME subscales and most of the demographic variables ranging from .20 to .50. For total HOME scores, they range from .32 to .53. No statistically significant correlations were reported for life events and the MC-HOME.

Correlations ranged from .30 to .40 for total MC-HOME scores and child achievement measures (Bradley et al., 1988). Also, modest, but statistically significant relations (.20 to .30) were reported between MC-HOME and classroom behavior. These

results suggest "that the instrument may be a valid indicator of the level of support for intellectual/academic development" (p. 69).

Bradley et al. (1988) report that "correlations with measures of social and emotional development are needed to help establish construct validity for the HOME" (p. 69).

Reviewer Comments

To date there has been no formal review of the MC-HOME Inventory, however, Bradley et al. (1988) provide comments on the construction of the inventory as well as strengths and limitations of the instrument. As mentioned earlier, the instrument was constructed both through theory and research. Bradley et al. comment on the method in which the inventory was constructed:

> Items were based on both theoretical propositions and empirical research concerning aspects of the environment that facilitate the cognitive, social and emotional development of young children . . . factor analysis was used as a partial basis for scale organization, but the . . . subscales are not measurements of "pure" environmental factors (p. 67).

Bradley et al. (1988) point out high internal consistency and "low to moderate correlations with measures of academic achievement and classroom behavior" (p.67) supporting the validity of the MC-HOME.

Several limitations are discussed, however some may also be viewed as positive characteristics of the instrument. First, as mentioned earlier, this instrument is better at

discriminating between inadequate and adequate amounts of stimulation and support. Bradley et al. comment that the instrument is:

> . . . not detailed enough to be labeled a "diagnostic/prescriptive" instrument. It helps identify probable areas of strength and weakness from which more detailed data gathering can help to formulate appropriate intervention strategies. (p. 69)

Therefore, it is best utilized as a screening tool. When used in this capacity, its narrow range of sensitivity can be viewed as a strength rather than a limitation of the instrument.

Another limitation is that "the scale does not conform in all respects to instruments with ideal characteristics from the standpoint of classical test theory" (p. 69). Bradley et al. (1988) are referring to the method of construction and high passing rates of many of the items. The instrument is best at identifying only a small portion rather than the full spectrum. Again, this may also be viewed as a strength because the elevated sensitivity at the lower end of the spectrum makes the MC-HOME and excellent screening tool.

Bradley et al. (1988) conclude that the information provided by the MC-HOME is beneficial in identifying environments that "pose a risk to children ages 6 to 10" (p. 67). Moreover, it provides additional information that traditional measures of SES and other family variables cannot offer. The authors suggest that the inventory may be useful to social workers and professionals in the schools because it may help our understanding of problems that occur in educating children.

While the MC-HOME has not been formally reviewed in the literature, the other two versions (EC and IT) of the HOME have. Because the characteristics are similar, they are discussed here.

Overall, reviewers (Boehm, 1985; Procidano, 1985) have been impressed with the HOME inventories. Boehm reviewed the initial validation studies of both instruments. For the most part, the findings are similar to those reported above for the MC-HOME. However, more statistical analyses were performed with each of these instruments. Specifically, test-retest reliability and predictive validity, using Binet scores, were established. Reliability coefficients ranged between .27 to .77 for subtests of the IT-HOME and .62 to .93 for the total score for both versions of the HOME (Boehm). The low values are to be expected given the short length of some of the subscales (Procidano). Predictive validity was also established. Boehm reported on the IT-HOME that it "correctly identified children scoring below IQ 70 at age three 71% of the time and 62% of the time those scoring at IQ 90 or above" (p. 664).

"Research pertaining to construct validity of the HOME . . . reveals an overall pattern of positive findings, with HOME scores related to subsequent malnutrition, language and cognitive development, school competence, therapeutic intervention, and high-risk status" (Procidano, 1985, p. 344).

The Infant-Toddler and Early Childhood versions of the HOME have been used and studied for many years. Indeed, the amount of research with these measures is impressive. It is reasonable to assume that the MC-HOME has similar qualities, however more research is needed to support these findings.

Summary Evaluation

Although their are limitations, the MC-HOME appears to be a valuable instrument with which to measure the environment in a more detailed manner than traditional measures offer.

Noteworthy characteristics include its heightened sensitivity in the lower ranges of ability, thus, it is best used to identify "at risk" environments. In this respect, it is better at screening rather than diagnosing the environment. There are no formal criteria by which to evaluate the quality of the environment. It appears that formal cutoff scores are difficult to establish because of cultural differences. Some research has focused on cultural differences, (see Bradley et al. 1989) however, future research should continue to address this area. Finally, it lacks the true psychometric qualities that classical test construction methods would normally provide.

In this reviewer's opinion, the MC-HOME inventory, as well as other versions of the HOME, are extremely useful tools. Given the ever-changing structure of the family in our world today, it is clear that there is a need for an instrument capable of measuring environmental variables. Indeed, the various versions of the HOME have demonstrated their superior descriptive ability over traditional SES and environmental measures through over 25 years of research and use.

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